

**S 1 Table:** Composition of the normal AIN-93M diet consisting of 3.5% mineral mixture (modified from Nakada et al., 2011, Journal of Hard Tissue Biology , p107-114)

Composition	%
Mineral Mixture	3.5
Casein	$1.4 \times 10^{+1}$
L-Cystine	$1.8 \times 10^{-1}$
$\beta$ - Cornstarch	$4.7 \times 10^{+1}$
$\alpha$ -Cornstarch	$1.6 \times 10^{+1}$
Sucrose	$1.0 \times 10^{+1}$
Soybean Oil	4.0
Cellulose Powder	5.0
Vitamin	1.0
Choline Bitartrate	0.3
Tert-Butylhydroquinone	$0.8 \times 10^{-3}$

Composition of 3.5% minerals	Minerals (%)
CaCO <sub>3</sub>	1.2
KH <sub>2</sub> PO <sub>4</sub>	$8.8 \times 10^{-1}$
K <sub>3</sub> C <sub>6</sub> H <sub>5</sub> O <sub>7</sub> · H <sub>2</sub> O	$9.8 \times 10^{-2}$
NaCl	$2.6 \times 10^{-1}$
K <sub>2</sub> SO <sub>4</sub>	$1.6 \times 10^{-1}$
MgO	$8.4 \times 10^{-2}$
FeC <sub>6</sub> H <sub>5</sub> O <sub>7</sub> · x H <sub>2</sub> O	$2.1 \times 10^{-2}$
ZnCO <sub>3</sub>	$5.8 \times 10^{-3}$
MnCO <sub>3</sub>	$2.2 \times 10^{-3}$
CuCO <sub>3</sub> · Cu(OH) <sub>2</sub> · H <sub>2</sub> O	$1.1 \times 10^{-3}$
KIO <sub>3</sub>	$3.5 \times 10^{-5}$
Na <sub>2</sub> SeO <sub>4</sub>	$3.6 \times 10^{-5}$
(NH <sub>4</sub> )Mo <sub>7</sub> O <sub>24</sub> · 4 H <sub>2</sub> O	$2.8 \times 10^{-5}$
Na <sub>2</sub> SiO <sub>3</sub> · 9 H <sub>2</sub> O	$5.1 \times 10^{-3}$
CrK(SO <sub>4</sub> ) <sub>2</sub> · 12 H <sub>2</sub> O	$9.6 \times 10^{-4}$
LiCl	$6.1 \times 10^{-5}$
H <sub>3</sub> BO <sub>3</sub>	$2.9 \times 10^{-4}$
NaF	$2.2 \times 10^{-4}$
NiCO <sub>3</sub> · 2 Ni(OH) <sub>2</sub> · 4 H <sub>2</sub> O	$1.1 \times 10^{-4}$
NH <sub>4</sub> VO <sub>3</sub>	$2.3 \times 10^{-5}$
Sucrose	$7.3 \times 10^{-1}$